REMARKS

Applicants would like to thank the Examiner for the thorough examination of the present application. The arguments supporting patentability of the claims are provided below.

I. The Claimed Invention

The present invention, as recited in independent Claim 1, for example, is directed to an asynchronous frame receiver comprising an input to receive asynchronous frames comprising standard characters, and a header comprising a break character with a data bit length greater than a data bit length of the standard characters. A first state machine is configured as a break character detection unit to detect the break character, and a second state machine is configured as a standard character processing unit to detect the standard characters. The first and second state machines may be further configured so that in a first operating mode only the standard character processing unit is to operate, and in a second operating mode both the first and second state machines are to operate, with the break character detection unit to activate the standard character processing unit after the character break has been detected.

An advantage of the claimed invention is that the first and second state machines may be used to provide two operating modes in an asynchronous frame receiver. For example, the first operating mode may be a conventional operating mode in which only the second state machine is active. The second operating mode may be an operating mode dedicated to protocols of the LIN type,

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providing a break character BRK in a frame beginning. In the second operating mode, both state machines may be used in which the first state machine activates the second state machine after a character BRK has been detected.

Independent Claim 10 is similar to independent Claim 1, and is directed to a microcontroller comprising a universal asynchronous receiver transceiver (UART).

Independent Claim 18 is similar to independent Claim 1, and is directed to method for processing asynchronous frames in an asynchronous frame receiver.

II. The Claims Are Patentable

The Examiner rejected independent Claims 1, 10 and 18 over the Gulick et al. patent in view of the Applicants' Admitted Prior Art, in view of the Sexton et al. patent, and in further view of the Hong et al. patent.

The Examiner cited Gulick et al. as disclosing an asynchronous frame receiver comprising a break character detection unit **412** (FIG. 21) for detecting the break character. The Examiner has taken the position that Gulick et al. also discloses a standard character processing unit for detecting standard characters.

As correctly noted by the Examiner, Gulick et al. fails to disclose an input for receiving asynchronous frames comprising standard characters, and a header comprising a break character with a data bit length greater than a data bit length of the standard characters. The Examiner referenced paragraph 5 and

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FIG. 1 in the specification (Applicants' Admitted Prior Art) as disclosing a header comprising break and standard characters.

The Examiner cited Sexton et al. as disclosing a header comprising a break character with a data bit length greater than a data bit length of the standard characters (column 3, lines 27-31). The Examiner correctly noted that Gulick et al. fails to disclose a break character detection unit comprising a first state machine, and wherein the standard character processing unit comprises a second state machine.

The Examiner cited Hong et al. as disclosing in FIG. 22 a state machine comprising a break character detection unit **198** and a standard character processing unit **202** (column 38, lines 1-41). As correctly noted by the Examiner, Hong et al. discloses that units **198, 202** are in a single state machine instead of separate state machines as in the claimed invention, but the Examiner references MPEP 2144.04 which states that separating elements to obtain the same function is not considered patentable, particularly if no new and unexpected result is produced.

The Applicants submit that new and unexpected results are obtained by having two separate state machines. Since the first state machine is configured to detect the break character within the header, it ensures a complete detection of the frame header before activating the second state machine for detecting the standard characters (when in the second operating mode). Reference paragraph 34 in the Applicants' specification.

With the single state machine in Hong et al. operating

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as <u>both</u> a break character detection unit **198** and a standard character processing unit **202**, there is the potential that the break character detection unit **198** begins operation before the standard character processing unit **202** detects a frame header. In sharp contrast, for the second operating mode of the first and second state machines in the claimed invention, the second state machine (i.e., break character detection unit) activates the first state machine (i.e., standard character processing unit) <u>after</u> the character break has been detected. This is not always possible with Hong et al.

Other advantages of the separate state machines is that different operating modes are supported. The first operating mode may be a conventional operating mode (in which only the second state machine is active), and the second operating mode may be an operating mode dedicated to protocols of the LIN type, for example, providing a break character BRK in a frame beginning. In the second operating mode, both state machines may be used in which the first state machine activates the second state machine after a character BRK has been detected.

The claims in the present invention recite that the asynchronous frames comprise standard characters, and a header comprises a break character with a data bit length greater than a data bit length of the standard characters. The Examiner is using a <u>three-way rejection</u> to provide this feature of the claimed invention.

As noted above, the Examiner cited Gulick et al. as disclosing an asynchronous frame receiver comprising a break

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character detection unit **412** (FIG. 21) for detecting the break character. The Examiner has taken the position that Gulick et al. also discloses a standard character processing unit for detecting standard characters. As correctly noted by the Examiner, Gulick et al. fails to disclose an input for receiving asynchronous frames comprising standard characters, and a header comprising a break character with a data bit length greater than a data bit length of the standard characters. The Examiner referenced paragraph 5 and FIG. 1 in the specification (Applicants' Admitted Prior Art) as disclosing a header comprising break and standard characters. The Examiner cited Sexton et al. as disclosing a header comprising a break character with a data bit length greater than a data bit length of the standard characters (column 3, lines 27-31).

The Applicants submit that is would not have been obvious to selectively combine the prior art references as suggested by the Examiner to produce this feature of the claimed invention. Particularly since the Sexton et al. patent fails to disclose that the controllers are operating as asynchronous frame receivers. Instead, the controllers in Sexton et al. communicate with each other via a common bus under the control of a master controller.

Accordingly, it is submitted that independent Claim 1 is patentable over the Gulick et al. patent in view of the Applicants' Admitted Prior Art, and further in view of the Hong et al. patent. Independent Claims 10 and 18 are similar to independent Claim 1. Therefore, it is submitted that these

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claims are also patentable over the Gulick et al. patent in view of the Applicants' Admitted Prior Art, and further in view of the Hong et al. patent.

In view of the patentability of independent Claims 1, 10 and 18, it is submitted that the dependent claims, which include yet further distinguishing features of the invention are also patentable. These dependent claims need no further discussion herein.

III. CONCLUSION

In view of the arguments provided herein, it is submitted that all the claims are patentable. Accordingly, a Notice of Allowance is requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

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